

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (cancelled)

2. (currently amended) ~~The method of Claim 1~~ A method for reducing track misregistration errors in a disk drive, comprising:
specifying a write fault of at least a first magnitude;
in response to detecting a write fault of at least said first magnitude, preventing a
write operation from occurring for at least a first time period, wherein said first time
period is a time equal to an amount of time required for at least two disk hard sectors to
pass beneath said transducer head;
specifying a write fault of at least a second magnitude, wherein said second
magnitude is greater than said first magnitude;
10 in response to detecting a write fault of at least said second magnitude, preventing
a write operation from occurring for at least a second time period, wherein said second
time period is greater than said first time period.

3. (currently amended) ~~The method of Claim 1~~ A method for reducing track misregistration errors in a disk drive, comprising:
specifying a write fault of at least a first magnitude;

5 in response to detecting a write fault of at least said first magnitude, preventing a
write operation from occurring for at least a first time period, wherein said first time
period is about 130 μs;

specifying a write fault of at least a second magnitude, wherein said second
magnitude is greater than said first magnitude;

10 in response to detecting a write fault of at least said second magnitude, preventing
a write operation from occurring for a least a second time period, wherein said second
time period is greater than said first time period.

4. (currently amended) ~~The method of Claim 1, A method for reducing track~~
~~misregistration errors in a disk drive, comprising:~~

specifying a write fault of at least a first magnitude;

in response to detecting a write fault of at least said first magnitude, preventing a
write operation from occurring for at least a first time period;

specifying a write fault of at least a second magnitude, wherein said second
magnitude is greater than said first magnitude;

5 in response to detecting a write fault of at least said second magnitude, preventing
a write operation from occurring for a least a second time period, wherein said second
time period is greater than said first time period and wherein said second time period is a
time equivalent to an amount of time required for at least 120 disk hard sectors to pass
beneath said transducer head.

5. (currently amended) ~~The method of Claim 1, A method for reducing track misregistration errors in a disk drive, comprising:~~

specifying a write fault of at least a first magnitude;
in response to detecting a write fault of at least said first magnitude, preventing a
5 write operation from occurring for at least a first time period;
specifying a write fault of at least a second magnitude, wherein said second
magnitude is greater than said first magnitude;
in response to detecting a write fault of at least said second magnitude, preventing
a write operation from occurring for at least a second time period, wherein said second
10 time period is greater than said first time period and wherein said second time period is
about 6 ms.

6. (currently amended) ~~The method of Claim 1 A method for reducing track misregistration errors in a disk drive, comprising:~~

specifying a write fault of at least a first magnitude;
in response to detecting a write fault of at least said first magnitude, preventing a
5 write operation from occurring for at least a first time period;
specifying a write fault of at least a second magnitude, wherein said second
magnitude is greater than about two times said first magnitude;
in response to detecting a write fault of at least said second magnitude, preventing
a write operation from occurring for at least a second time period, wherein said second
10 time period is greater than said first time period.

7. (cancelled)

8. (currently amended) ~~The method of Claim 7, A method for reducing track misregistration errors in a disk drive, comprising:~~

~~specifying a write fault of at least a first magnitude;~~

~~in response to detecting a write fault of at least said first magnitude, preventing a~~

5 ~~write operation from occurring for at least a first time period;~~

~~specifying a write fault of at least a second magnitude, wherein said second~~

~~magnitude is greater than said first magnitude;~~

~~in response to detecting a write fault of at least said second magnitude, preventing~~

~~a write operation from occurring for a least a second time period, wherein said second~~

10 ~~time period is greater than said first time period, wherein said write faults are measured~~

~~as a distance of a transducer head from a centerline of a data track, and wherein said~~

~~second magnitude comprises a write fault of about 35% of a data track width.~~

9. (currently amended) The method of Claim 7 ~~8~~, wherein said first magnitude comprises a write fault of greater than about 15% of a data track width, ~~and wherein said second magnitude comprises a write fault of about 35% of a data track width.~~

10. (currently amended) ~~The method of Claim 1, A method for reducing track misregistration errors in a disk drive, comprising:~~

~~specifying a write fault of at least a first magnitude;~~

in response to detecting a write fault of at least said first magnitude, preventing a
5 write operation from occurring for at least a first time period;
specifying a write fault of at least a second magnitude, wherein said second
magnitude is greater than said first magnitude;
in response to detecting a write fault of at least said second magnitude, preventing
a write operation from occurring for a least a second time period, wherein said second
10 time period is greater than said first time period and wherein said second time period is
equivalent to a time required for a disk in said disk drive make at least 1/4 of a revolution
but less than a full revolution.

11. (currently amended) ~~The method of Claim 1, A method for reducing track~~
~~misregistration errors in a disk drive, comprising:~~
specifying a write fault of at least a first magnitude;
in response to detecting a write fault of at least said first magnitude, preventing a
5 write operation from occurring for at least a first time period;
specifying a write fault of at least a second magnitude, wherein said second
magnitude is greater than said first magnitude;
in response to detecting a write fault of at least said second magnitude, preventing
a write operation from occurring for a least a second time period, wherein said second
10 time period is greater than said first time period and wherein said second time period is
equivalent to a time required for a disk in said disk drive to make at least $\frac{1}{2}$ a revolution
but not more than $\frac{3}{4}$ of a revolution.

12. (currently amended) ~~The method of Claim 1, A method for reducing track misregistration errors in a disk drive, comprising:~~

specifying a write fault of at least a first magnitude;
in response to detecting a write fault of at least said first magnitude, preventing a
5 write operation from occurring for at least a first time period;
specifying a write fault of at least a second magnitude, wherein said second
magnitude is greater than said first magnitude;
in response to detecting a write fault of at least said second magnitude, preventing
a write operation from occurring for a least a second time period, wherein said second
10 time period is greater than said first time period and wherein said second the period is
equivalent to a time required for a disk in said disk drive to make about 3/4 of a
revolution.

13. (cancelled)

14. (currently amended) ~~The hard disk drive of Claim 13 A hard disk drive~~

comprising:

a base;
a disk comprising a plurality of data tracks arranged concentrically about said
5 spindle, wherein each of said data tracks is segmented into a plurality of data sectors by
servo sectors, and wherein said disks may be rotated at a constant velocity with respect to
said base;

a transducer head having a read head for reading information from said data tracks and a write head for writing information to said data tracks, wherein said transducer head is movable in a radial direction with respect to said disk to address a selected one of said plurality of data tracks;

a voice coil motor, interconnected to said transducer head, for moving said transducer head with respect to said data tracks;

a controller, interconnected to said voice coil motor, for controlling a position of said transducer head with respect to said data tracks, wherein said controller receives information concerning a position of said transducer head with respect to a centerline of a track being followed by said transducer head from said read head, wherein following a deviation of said transducer head from said centerline by a first distance, said write head is prevented from writing information to said data track for a first time period, wherein said first time period is a time equal to an amount of time required for at least two servo sectors to pass beneath said transducer head, wherein following a deviation of said transducer head from said centerline by a second distance, greater than said first distance, said write head is prevented from writing information to said data track for a second time period, greater than said first time period.

15. (currently amended) ~~The hard disk drive of Claim 13~~ A hard disk drive comprising:

a base;

a disk comprising a plurality of data tracks arranged concentrically about said spindle, wherein each of said data tracks is segmented into a plurality of data sectors by

servo sectors, and wherein said disks may be rotated at a constant velocity with respect to said base;

a transducer head having a read head for reading information from said data tracks and a write head for writing information to said data tracks, wherein said transducer head is movable in a radial direction with respect to said disk to address a selected one of said plurality of data tracks;

a voice coil motor, interconnected to said transducer head, for moving said transducer head with respect to said data tracks;

a controller, interconnected to said voice coil motor, for controlling a position of said transducer head with respect to said data tracks, wherein said controller receives information concerning a position of said transducer head with respect to a centerline of a track being followed by said transducer head from said read head, wherein following a deviation of said transducer head from said centerline by a first distance, said write head is prevented from writing information to said data track for a first time period, wherein said first time period is about 130 μ s, wherein following a deviation of said transducer head from said centerline by a second distance, greater than said first distance, said write head is prevented from writing information to said data track for a second time period, greater than said first time period.

16. (currently amended) The hard disk drive of Claim 13 A hard disk drive comprising:

a base;

5 a disk comprising a plurality of data tracks arranged concentrically about said
spindle, wherein each of said data tracks is segmented into a plurality of data sectors by
servo sectors, and wherein said disks may be rotated at a constant velocity with respect to
said base;

10 a transducer head having a read head for reading information from said data
tracks and a write head for writing information to said data tracks, wherein said
transducer head is movable in a radial direction with respect to said disk to address a
selected one of said plurality of data tracks;

15 a voice coil motor, interconnected to said transducer head, for moving said
transducer head with respect to said data tracks;

20 a controller, interconnected to said voice coil motor, for controlling a position of
said transducer head with respect to said data tracks, wherein said controller receives
information concerning a position of said transducer head with respect to a centerline of a
track being followed by said transducer head from said read head, wherein following a
deviation of said transducer head from said centerline by a first distance, said write head
is prevented from writing information to said data track for a first time period, wherein
following a deviation of said transducer head from said centerline by a second distance,
greater than said first distance, said write head is prevented from writing information to
said data track for a second time period, greater than said first time period, wherein said
second time period is a time equivalent to an amount of time required for at least 120
servo sectors to pass beneath said transducer head.

17. (currently amended) ~~The hard disk drive of Claim 13~~ A hard disk drive comprising:

a base;

a disk comprising a plurality of data tracks arranged concentrically about said spindle, wherein each of said data tracks is segmented into a plurality of data sectors by servo sectors, and wherein said disks may be rotated at a constant velocity with respect to said base;

a transducer head having a read head for reading information from said data tracks and a write head for writing information to said data tracks, wherein said transducer head is movable in a radial direction with respect to said disk to address a selected one of said plurality of data tracks;

a voice coil motor, interconnected to said transducer head, for moving said transducer head with respect to said data tracks;

a controller, interconnected to said voice coil motor, for controlling a position of said transducer head with respect to said data tracks, wherein said controller receives information concerning a position of said transducer head with respect to a centerline of a track being followed by said transducer head from said read head, wherein following a deviation of said transducer head from said centerline by a first distance, said write head is prevented from writing information to said data track for a first time period, wherein following a deviation of said transducer head from said centerline by a second distance, greater than said first distance, said write head is prevented from writing information to said data track for a second time period, greater than said first time period, wherein said second time period is about 6 ms.

18. (currently amended) ~~The hard disk drive of Claim 13~~ A hard disk drive comprising:

a base;

5 a disk comprising a plurality of data tracks arranged concentrically about said spindle, wherein each of said data tracks is segmented into a plurality of data sectors by servo sectors, and wherein said disks may be rotated at a constant velocity with respect to said base;

10 a transducer head having a read head for reading information from said data tracks and a write head for writing information to said data tracks, wherein said transducer head is movable in a radial direction with respect to said disk to address a selected one of said plurality of data tracks;

15 a voice coil motor, interconnected to said transducer head, for moving said transducer head with respect to said data tracks;

20 a controller, interconnected to said voice coil motor, for controlling a position of said transducer head with respect to said data tracks, wherein said controller receives information concerning a position of said transducer head with respect to a centerline of a track being followed by said transducer head from said read head, wherein following a deviation of said transducer head from said centerline by a first distance, said write head is prevented from writing information to said data track for a first time period, wherein following a deviation of said transducer head from said centerline by a second distance, greater than said first distance, said write head is prevented from writing information to said data track for a second time period, greater than said first time period, wherein said second distance is greater than about two times said first distance.

19. (currently amended) ~~The hard disk drive of Claim 13~~ A hard disk drive comprising:

a base;

a disk comprising a plurality of data tracks arranged concentrically about said

5 spindle, wherein each of said data tracks is segmented into a plurality of data sectors by

servo sectors, and wherein said disks may be rotated at a constant velocity with respect to

said base;

a transducer head having a read head for reading information from said data

tracks and a write head for writing information to said data tracks, wherein said

10 transducer head is movable in a radial direction with respect to said disk to address a

selected one of said plurality of data tracks;

a voice coil motor, interconnected to said transducer head, for moving said

transducer head with respect to said data tracks;

a controller, interconnected to said voice coil motor, for controlling a position of

15 said transducer head with respect to said data tracks, wherein said controller receives

information concerning a position of said transducer head with respect to a centerline of a

track being followed by said transducer head from said read head, wherein following a

deviation of said transducer head from said centerline by a first distance, said write head

is prevented from writing information to said data track for a first time period, wherein

20 following a deviation of said transducer head from said centerline by a second distance,

greater than said first distance, said write head is prevented from writing information to

said data track for a second time period, greater than said first time period, wherein said

second distance comprises a write fault of about 35% of a data track width.

20. (currently amended) The hard disk drive of Claim 19, wherein said first distance comprises a write fault of greater than about 15% of a data track width, and wherein said second distance comprises a write fault of about 35% of a data track width.

21. (currently amended) ~~The hard disk drive of Claim 13~~ A hard disk drive comprising:

a base;

a disk comprising a plurality of data tracks arranged concentrically about said spindle, wherein each of said data tracks is segmented into a plurality of data sectors by servo sectors, and wherein said disks may be rotated at a constant velocity with respect to said base;

a transducer head having a read head for reading information from said data tracks and a write head for writing information to said data tracks, wherein said transducer head is movable in a radial direction with respect to said disk to address a selected one of said plurality of data tracks;

a voice coil motor, interconnected to said transducer head, for moving said transducer head with respect to said data tracks;

a controller, interconnected to said voice coil motor, for controlling a position of said transducer head with respect to said data tracks, wherein said controller receives information concerning a position of said transducer head with respect to a centerline of a track being followed by said transducer head from said read head, wherein following a deviation of said transducer head from said centerline by a first distance, said write head

is prevented from writing information to said data track for a first time period, wherein
20 following a deviation of said transducer head from said centerline by a second distance,
greater than said first distance, said write head is prevented from writing information to
said data track for a second time period, greater than said first time period, wherein said
second time period is equivalent to a time refined required for said disk to make at least
1/4 of a revolution but less than a full revolution.

22. (currently amended) ~~The hard disk drive~~ Claim 13 A hard disk drive
comprising:

a base;

a disk comprising a plurality of data tracks arranged concentrically about said
5 spindle, wherein each of said data tracks is segmented into a plurality of data sectors by
servo sectors, and wherein said disks may be rotated at a constant velocity with respect to
said base;

a transducer head having a read head for reading information from said data
tracks and a write head for writing information to said data tracks, wherein said
10 transducer head is movable in a radial direction with respect to said disk to address a
selected one of said plurality of data tracks;

a voice coil motor, interconnected to said transducer head, for moving said
transducer head with respect to said data tracks;

a controller, interconnected to said voice coil motor, for controlling a position of
15 said transducer head with respect to said data tracks, wherein said controller receives
information concerning a position of said transducer head with respect to a centerline of a

track being followed by said transducer head from said read head, wherein following a deviation of said transducer head from said centerline by a first distance, said write head is prevented from writing information to said data track for a first time period, wherein following a deviation of said transducer head from said centerline by a second distance, greater than said first distance, said write head is prevented from writing information to said data track for a second time period, greater than said first time period, wherein said second time period is equivalent to a time required for said disk to make at least $\frac{1}{2}$ a revolution but not more than $\frac{3}{4}$ of a revolution.

23. (currently amended) ~~The hard disk drive of Claim 13~~ A hard disk drive comprising:

a base;

a disk comprising a plurality of data tracks arranged concentrically about said spindle, wherein each of said data tracks is segmented into a plurality of data sectors by servo sectors, and wherein said disks may be rotated at a constant velocity with respect to said base;

a transducer head having a read head for reading information from said data tracks and a write head for writing information to said data tracks, wherein said transducer head is movable in a radial direction with respect to said disk to address a selected one of said plurality of data tracks;

a voice coil motor, interconnected to said transducer head, for moving said transducer head with respect to said data tracks;

15 a controller, interconnected to said voice coil motor, for controlling a position of
 said transducer head with respect to said data tracks, wherein said controller receives
 information concerning a position of said transducer head with respect to a centerline of a
 track being followed by said transducer head from said read head, wherein following a
 deviation of said transducer head from said centerline by a first distance, said write head
 is prevented from writing information to said data track for a first time period, wherein
20 following a deviation of said transducer head from said centerline by a second distance,
 greater than said first distance, said write head is prevented from writing information to
 said data track for a second time period, greater than said first time period, wherein said
 second time period is equivalent to a time required for said disk to make about 3/4 of a
 revolution.

24-50. (cancelled)

51. (cancelled)

52. (currently amended) The method of Claim 51 A method for reducing track
 misregistration errors in a disk drive comprising:
 detecting an off-track event, wherein a transducer head of said disk drive is
 outside of an off-track threshold;
5 comparing a magnitude of said detected off-track event to a severe shock
 threshold; and

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prohibiting write operations for an extended period of time if said detected off-track event exceeds said severe shock threshold, wherein said extended period of time is equivalent to an amount of time required for at least 120 disk hard sectors to pass beneath end transducer head.

53. (currently amended) ~~The method of Claim 51~~ A method for reducing track misregistration errors in a disk drive comprising:

detecting an off-track event, wherein a transducer head of said disk drive is outside of an off-track threshold;

5 comparing a magnitude of said detected off-track event to a severe shock threshold; and

prohibiting write operations for an extended period of time if said detected off-track event exceeds said severe shock threshold, wherein said extended period of time is about 6ms.

54. (cancelled)

55. (currently amended) ~~The method of Claim 51~~ A method for reducing track misregistration errors in a disk drive comprising:

detecting an off-track event, wherein a transducer head of said disk drive is outside of an off-track threshold;

5 comparing a magnitude of said detected off-track event to a severe shock threshold; and

prohibiting write operations for an extended period of time if said detected off-track event exceeds said severe shock threshold, wherein said severe shock threshold comprises a distance of said transducer head from a centerline of a data track of about 35% of a width of said data track.

56. (currently amended) ~~The method of Claim 51~~ A method for reducing track misregistration errors in a disk drive comprising:

detecting an off-track event, wherein a transducer head of said disk drive is outside of an off-track threshold;

5 comparing a magnitude of said detected off-track event to a severe shock threshold; and

prohibiting write operations for an extended period of time if said detected off-track event exceeds said severe shock threshold, wherein said extended period of time is equivalent to an amount of time required for a disk in said disk drive to make at least 1/4 of a revolution but less than a full revolution.

57. (currently amended) ~~The method of Claim 51~~ A method for reducing track misregistration errors in a disk drive comprising:

detecting an off-track event, wherein a transducer head of said disk drive is outside of an off-track threshold;

5 comparing a magnitude of said detected off-track event to a severe shock threshold; and

10

prohibiting write operations for an extended period of time if said detected off-track event exceeds said severe shock threshold, wherein said extended period of time is equivalent to an amount of time required for a disk in said disk drive to make at least $\frac{1}{2}$ a revolution but not more than $\frac{3}{4}$ of a revolution.

58. (currently amended) ~~The method of Claim 51~~ A method for reducing track misregistration errors in a disk drive comprising:

detecting an off-track event, wherein a transducer head of said disk drive is outside of an off-track threshold;

5 comparing a magnitude of said detected off-track event to a severe shock threshold; and

prohibiting write operations for an extended period of time if said detected off-track event exceeds said severe shock threshold, wherein said extended period of time is equivalent to an amount of time required for a disk in said disk drive to make about $\frac{3}{4}$ of a revolution.

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59. (cancelled)

60. (currently amended) ~~The method of Claim 59~~ A method for reducing track misregistration errors in a disk drive, comprising:

detecting an off-track event, wherein a transducer head of said disk drive is outside of an off-track threshold;

5 comparing a magnitude of said detected off-track event to a severe shock
threshold;
prohibiting write operations for an extended period of time if said detected off-
track event exceeds said severe shock threshold; and,
prohibiting write operations for a shortened period of time if said detected off-
10 track event does not exceed said severe shock threshold, wherein said shortened period of
time is equivalent to an amount of required for at least 2 data track sectors to pass
beneath said transducer head.

61. (currently amended) ~~The method of Claim 59~~ A method for reducing track misregistration errors in a disk drive, comprising:

detecting an off-track event, wherein a transducer head of said disk drive is outside of an off-track threshold;

comparing a magnitude of said detected off-track event to a severe shock threshold;

prohibiting write operations for an extended period of time if said detected off-track event exceeds said severe shock threshold; and,

prohibiting write operations for a shortened period of time if said detected off-track event does not exceed said severe shock threshold, wherein said shortened period of time is about 130 ms.

62. (currently amended) The method of Claim 56 55, wherein an off-track event
comprises a deviation of said transducer head from a centerline of a data track by a
distance equivalent to about 15% of a width of said data track.